A Hotspot of Lichen Diversity - Klondike Gold Rush National Historical Park

By Toby Spribille and David Schirokauer

Throughout the world, biological inventories occasionally reveal areas where undescribed species come to light, sometimes several at a time. These hotspots of biodiversity, often discovered in dense, remote, tropical rain forests, are hailed as landmark discoveries. But we seldom think of such undiscovered treasures as occurring in the temperate and boreal environments of North America. The 2007-2008 lichen inventory at Klondike Gold Rush National Historical Park deals not with a 'lost forest' but with a well traversed area made famous during the Klondike Gold Rush of 1898-1899. In the park's first intensive lichen inventory, at least 766 taxa of lichenized and lichenicolous fungi were detected. In an area of only 13,000 acres, this represents one of the largest numbers of lichens per unit area ever reported and the largest number of lichen species reported from any national park.

Klondike Gold Rush NHP is unique among small protected areas in that it harbours a strong and diverse climatic and geographic gradient due to its position on the edge of the North American mainland. The mountain passes provide a strong ecotonal gradient between a maritime and a dry, continental interior ecoregion. Habitats in the park extend from relatively warm intertidal and low elevation mesic coastal forests dominated by Sitka spruce (*Picea sitchensis*) and western hemlock (*Tsuga heterophylla*), through mid-elevation forests that add mountain hemlock (*Tsuga mertensiana*) to the mix, up to high elevation forests dominated by subalpine fir (*Abies lasiocarpa*). The mountain passes and adjacent peaks contain pockets of alpine tundra surrounded by lichen-dominated talus slopes and bedrock.

At least four lichen species will be described as new to science and further laboratory analysis of specimens is likely to yield additional new finds. One of the most remarkable finds was a new genus and species, which will be called *Steineropsis alaskana*. The new genus bears similarity to the genus *Steinera* found in New Zealand and represents one of the most significant new finds in western North America macrolichens in many years. Another new macrolichen will be described in the genus *Stereocaulon* and named after the National Park, as *Sterocaulon klondikense*. Two crustose lichen species, in the genera *Coccotrema* and *Pertusaria*, are new species growing on conifer trunks and twigs. One of them, *Coccotrema hahriae*, is being named for the park's former Natural Resource Manager Meg Hahr, who recently passed away, while the other, *Pertusaria mccroryae*, is named after a prominent, recently deceased Canadian conservationist. Both species appear to have strong affinities for old forest stands, and in the park, are found on gnarled trees over rocky, shallow soils. These new species descriptions, along with a checklist, will appear in an upcoming issue of *The Bryologist* and in a check-list of Alaska lichens to be published in collaboration with other lichenologists from the region in late 2010/2011.

NPS photograph

NPS photograph by Dave Schirokauer

Figure 1. (Top) Toby Spribille searches for rare lichens on a rock outcrop near the Chilkoot Trail, Klondike Gold Rush NHP.

Figure 2. (Left) *Coccotrema hahriae* is a new species of epiphytic lichen described from Klondike Gold Rush. It is named after a former Natural Resource Program Manager, Meg Hahr, who passed away unexpectedly in 2009.